REMARKS

Claims 1 through 14 stand rejected under 35 USC 112, second paragraph, as being indefinite. Amendments are submitted above to overcome these rejections, as will be further described herein below.

Claims 1 through 14 stand rejected under 35 USC 101 as being directed to non-statutory subject matter. Amendments are submitted above to overcome these rejections, as will be further described herein below.

Claims 1 through 14 stand rejected under 35 USC 103(a) as being obvious with respect to Press et al. in view of Hayami et al. Remarks are submitted herein below to traverse these rejections.

Response to rejections under 35 USC 112, second paragraph.

Applicant herein submits amendments in accordance with Examiner's observations regarding indefiniteness, except regarding claims 3, 6 and 9, as follows.

Applicant asserts regarding claims 3, 6 and 9 that the result of "arranging operand tokens in an arranged subgroup in order" is to produce the "ordered operands" referred to subsequently. To make this more clear, "arranging operand tokens in an arranged subgroup in order" is amended above to state ". . . in a certain order, thereby producing ordered operands."

Examiner made no objection to the following in claims 3, 6 and 9, however, to make clear that the "token pairs" and "operand tokens" are referred to in the respective immediately preceding claims, Applicant herein submits amendments to state "the token pairs" and "the operand tokens." Also, the reference to "an arranged subgroup" is amended to merely "such a

subgroup" to make clear that the subgroup is referred to in the immediately preceding "arranging the token pairs into subgroups."

Response to rejections under 35 USC 101.

To overcome the rejection regarding claiming non-statutory subject matter the independent claims are amended herein above to state that "in a simulation of a physical system, . . . the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations." The claimed invention involves "determining an equivalence of the first and second sets of simultaneous linear algebraic equations."

Language merely clarifying that which is inherent to what is stated in the specification is not new matter. MPEP 2163. 07 (a). Simulation, by its inherent nature, concerns a mathematical description of a physical system. The specification states that the invention is directed to applications including simulations. Page 1, lines 14 and 15 ("Such applications include engineering and simulation computer codes.") The description of the system disclosed in the present application is by simultaneous linear algebraic equations. Page 6, lines 6 through 14. Therefore, no new matter is added by the addition to the independent claims that the invention is limited to a method, apparatus, etc., "in a simulation of a physical system, . . . the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations."

Claims limited to a practical application in the technological arts are drawn to statutory subject matter. MPEP 2106 IV B 2 (b) ii). With the addition of the above described limitation,

the invention is indeed limited to such a practical application, and Applicant contends that the amendments have overcome the rejection under 35 USC 101.

Response to rejections under 35 USC 103(a).

The present invention provides a useful solution to a problem that arises when simulating physical systems that are described by algebraic equations, more particularly simultaneous linear algebraic equations ("SLAE's"). That is, when dealing with the algebraic expressions describing physical systems, prior to the present invention it has problematically not always been possible to determine a factor common among the expressions so that the common factor can be eliminated. This makes it difficult to determine equivalence of two SLAE's. Page 1, lines 17 through 19.

The patents cited in the Office Action deal with the solution of linear algebraic equations. However, in the cited patents the coefficient matrices of the equations have elements that are all numbers. None of the cited patents allow even one element in a coefficient matrix to be algebraic. In contrast, according to the present invention, as claimed, unknowns are iteratively eliminated from the sets of SLAE's until each is in a form:

$$(l_{ii})_k x_i = (r_i)_k$$

"wherein l_{ii} and r_i are *algebraic expressions*." Claim 1. This elimination requires no division operation between two algebraic expressions, which advantageously avoids numerical instability problems. Page 6, line 30 through page 11, line 24; Page 11, lines 23 and 24 ("Note the absence of any division in the entire process [described above].").

Hayami et al. (patent number US 5,200,915), like the other patents cited in the Office Action, deals solely with numbers instead of algebraic expressions in its coefficient matrix,

which is a symmetric matrix. Col. 5, lines 9 through 13. Furthermore, Hayami et al. focus on exploiting properties of a *symmetric* matrix for a single SLAE. Page 4, lines 7 through 49.

PRIOR ART OF RECORD

Applicants have reviewed the prior art of record cited by but not relied upon by Examiner, and assert that the invention is patentably distinct.

REQUESTED ACTION

Applicants contend that the invention as claimed in accordance with amendments submitted herein is patentably distinct, and hereby request that Examiner grant allowance and prompt passage of the application to issuance.

Accompanying this Response is an Applicant Initiated Interview Request Form, requesting an telephone interview with Examiner on August 22, at 11 am Eastern time to discuss the case. Examiner may call or send Attorney an e-mail if the proposed time for the telephone call is not convenient.

Respectfully submitted,

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